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NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

Received Solid Waste Section FEB 2008

Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

Mecklenburg County Land Use & Environmental Services

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Dennis F. Tyndall, P.G. Phone: (704) 336-5454

E-mail: dennis.tyndall@MecklenburgCountyNC.gov

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Holbrooks Road Landfill	15401 Holbrooks Road Huntersville, NC 28078	60-02	.0500	Sept. 10-18, 2007

Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☒ Detection Monitoring ☐ Assessment Monitoring ☐ Corrective Action

Type of data submitted: (Check all that apply)

☒ Groundwater monitoring data from monitoring wells
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☒ Surface water monitoring data
☒ Methane gas monitoring data
☐ Corrective action data (specify)
☐ Other(specify)

Notification attached?

☐ No. No groundwater or surface water standards or explosive methane gas limits were exceeded.
☒ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
☒ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

Dennis F. Tyndall, P.G. Hydrogeologist (704) 336-5454
Facility Representative Name (Print) Title (Area Code) Telephone Number

Signature 4 Feb. 2008 Affix NC Licensed Professional Geologist Seal
Date

NORTH CAROLINA LICENSED SEAL 1845 GEOLOGIST DENNIS F. TYNDALL

Revised 10/2006

MECKLENBURG COUNTY

Land Use and Environmental Services Agency

February 4, 2008

Jaclynne Drummond
North Carolina Department of Environment
and Natural Resources
Division of Waste Management
Groundwater Compliance Unit
Mail Service Center 1646
Raleigh, NC 27699-1646

Subject: Holbrooks Road Landfill Permit 60-02
Semi-annual Monitoring Results

Dear Ms. Drummond:

Please find enclosed the laboratory report and spreadsheets for the closed Holbrooks Road Landfill September 2007 water quality monitoring event. Samples were collected from fifteen (15) monitoring wells (HRW-7, HRW-8, HRW-9, HRW-10, HRW-11R, HRW-12, HRW-13, HRW-14, HRW-15 HRW-16, HRW-17, HRW-18, HRW-19, HRW-20 and HRW-21) and three (3) surface-water sampling locations (HRSW-2, HRSW-3 and HRSW-4). Samples were analyzed for metals and volatile organic compounds ("VOCs") in accordance with the approved Sampling and Analysis Plan dated March 3, 2003. Field measurements of temperature, pH, and specific conductivity were made at each sampling location using a calibrated instrument. Additionally, measurements of dissolved oxygen were made at each surface-water sampling location.

The Excel spreadsheets containing the monitoring data are labeled to reflect the units that are used for reporting. Detection levels and applicable standards have been included for all sampling locations. Surface water standards listed are the water quality standards established for freshwater classification for aquatic life as outlined in 15A NCAC 2B "Classification and Water Quality Standards Applicable to Surface Waters of North Carolina". Groundwater standards listed are the standards outlined in 15A NCAC 2L "Classification of Water Quality Standards applicable to the Groundwaters of North Carolina". If the sample is reported in parts per billion, then the standard is also reported in parts per billion. Results exceeding water quality standards are highlighted in yellow for ease of identification.

Groundwater samples:

Cadmium was detected at 30 ug/l in the sample collected from HRW-7. This is the only metal detected above the 2L standard for any of the samples collected this event. Cadmium first detected in HRW-7 in September 2004. Historical range of detection has been 3.6 ug/l to 45 ug/l.

VOCs were detected in samples collected from six monitoring wells (HRW-7, HRW-9, HRW-12, HRW-13, HRW-17 and, HRW-18). The table below summarizes VOC's detected. Results shown in bold exceed the 2L Standard.

Well ID	Volatile Constituent	Concentration (ppb)	2L Standard (ppb)
HRW-7	cis-1,2-Dichloroethene	13	70
	Trichloroethene	**11**	**2.8**
HRW-9	1,2-Dichlorobenzene	5	620
	1,4-Dichlorobenzene	6	75
	1,1-Dichloroethane	40	700
	cis-1,2-Dichloroethene	**91**	**70**
	Methylene Chloride	**12**	**4.6**
	Tetrachlorethene	**7**	**0.7**
	Trichloroethene	**11**	**2.8**
	Trichlorofluoromethane	19	2,100
	Vinyl Chloride	**8**	**0.015**
HRW-12	1,1-Dichloroethane	4	700
HRW-13	1,1-Dichloroethane	20	700
	Cis-1,2-Dichloroethene	6	70
HRW-17	Chloroethane	7	2,800
	1,1-Dichloroethane	28	700
	Cis-1,2-Dichloroethene	6	70
HRW-18	**Benzene**	**10**	**1**
	Chloroethane	9	2,800
	1,1-Dichloroethane	63	700
	1,4-Dichlorobenzene	5	75
	cis-1,2-Dichloroethene	6	70
	Trichloroethene	**3**	**2.8**
	Trichlorofluoromethane	27	2,100
	Vinyl Chloride	**25**	**0.015**

The number of VOCs detected in HRW-7 declined from three to two compared to the March 2007 sampling results. Vinyl Chloride was not detected this sampling event. Trichloroethene was detected above the 2L Standard.

The number of VOCs detected in HRW-9 decreased from ten to nine as compared with the March 2007 sampling results. Benzene was not detected this sampling event. Concentrations of VOCs detected were similar to the March 2007 results.

The number of VOC's detected in HRW-12 declined from two to one compared with the September 2006 sampling results. Chlorobenzene was not detected this sampling event. The VOC detected in HRW-12 was below the 2L Standard.

The number of VOCs detected in HRW-13 was the same as the March 2007 sampling results. Concentrations declined slightly. VOCs detected in HRW-13 were below the 2L Standard.

The number of VOCs detected in HRW-17 increased from two to three compared with the September 2006 sampling results. Chloroethane was detected this sampling event. Concentrations of 1,1-Dichloroethene and Cis-1,2-Dichloroethene remained similar to the September 2006 results. VOCs detected in HRW-17 were below the 2L Standard.

The number of VOC's detected in the sample collected from HRW-18 increased six to eight compared with the March 2007 sampling results. Trichlorðethylene and 1,4-Dichlorobenzene detected last in the September 2006 monitoring were again detected this sampling event. Vinyl Chloride and Benzene were detected above the 2L Standard.

Field-measured parameters for groundwater samples are summarized in the table below.

Sample Location	Temp. °C	pH	Specific Conductivity umho/cm
HRW-7	19.0	**5.80**	623
HRW-8	15.0	**5.96**	152
HRW-9	14.0	**5.94**	775
HRW-10	16.6	6.56	965
HRW-11R	16.4	**5.85**	1,570
HRW-12	16.4	**6.37**	2,340
HRW-13	16.5	**5.80**	322
HRW-14	14.0	6.78	177
HRW-15	14.8	7.11	186
HRW-16	17.1	6.58	339
HRW-17	14.7	**6.22**	1,120
HRW-18	17.0	**6.41**	1,326
HRW-19	16.7	6.61	269
HRW-20	15.9	**6.24**	229
HRW-21	16.3	**5.94**	491

Temperatures measured ranged from a low of 14.0° Celsius in HRW-14 to a high of 19.0° Celsius in HRW-7.

Measurements of pH ranged from a low of 5.80 in wells HRW-7 and HRW-13 to a high of 7.11 in HRW-15. Measurements of pH were more acidic than the 2L Standard range of 6.5 to 8.5 standard units in wells HRW-7, HRW-8, HRW-9, HRW-11R, HRW-12R, HRW-13, HRW-17, HRW-18, HRW-20 and background well HRW-21.

Specific conductivity measurements ranged from a low of 177 umho/cm in well HRW-14 to a high of 2,340 umho/cm in well HRW-12.

Surface-water samples:
No metals or VOCs were detected in any of the three surface-water sampling locations (HRSW-2, HRSW-3 and HRSW-4). All field-measured parameters were within the established regulatory limits and consistent with historical measurements. The table below summarizes field-measured parameters for surface-water samples.

Sample Location	Temp. °C	pH	Specific Conductivity	Dissolved Oxygen
HRSW-2	16.7	7.64	239 umho/cm	7.47 mg/l
HRSW-4	15.8	7.72	236 umho/cm	8.07 mg/l
HRSW-3	15.6	7.62	236 umho/cm	8.10 mg/l

Please call me at (704) 336-5454 if you have any questions regarding this report.

Sincerely,

Dennis F. Tyndall, P.G.
Hydrogeologist
Groundwater and Wastewater Services

cc: Amber Lindon, P.G., Mecklenburg County LUESA, Solid Waste Management